



Android-Controlled LED Light Shirt

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PARTS:

- [Arduino or similar 8-bit microcontroller \(1\)](#)
- [Bliptronics LED pixel \(60\)](#)
- [Bluetooth Modem - BlueSMiRF Silver \(1\)](#)
- [Android phone \(1\)](#)
- [LM1084IT 5Amp 5V LDO Linear Regulator \(1\)](#)

SUMMARY

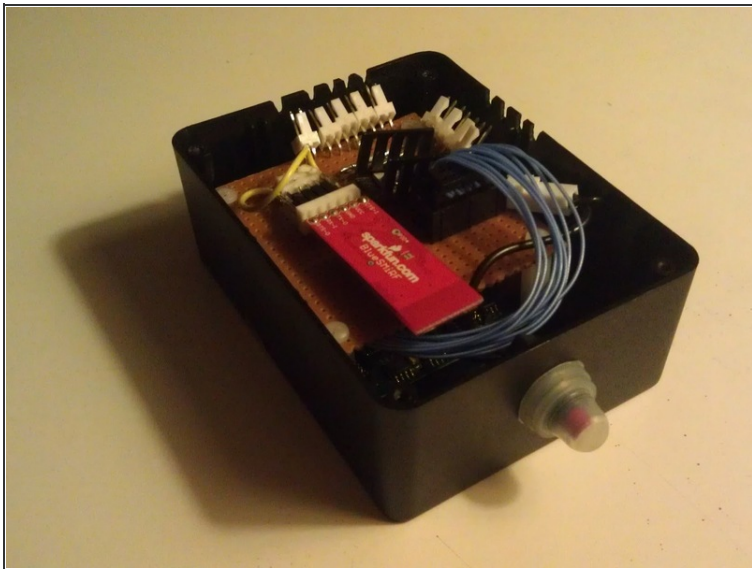
Write an Android app to control an LED light shirt. The app communicates to an ATmega128 via a **BlueSMiRF** Bluetooth transceiver. The microcontroller outputs data on the SPI to daisy-chained shift-register-controlled constant-current regulators driving RGB LEDs.

Step 1 — Android-Controlled LED Light Shirt



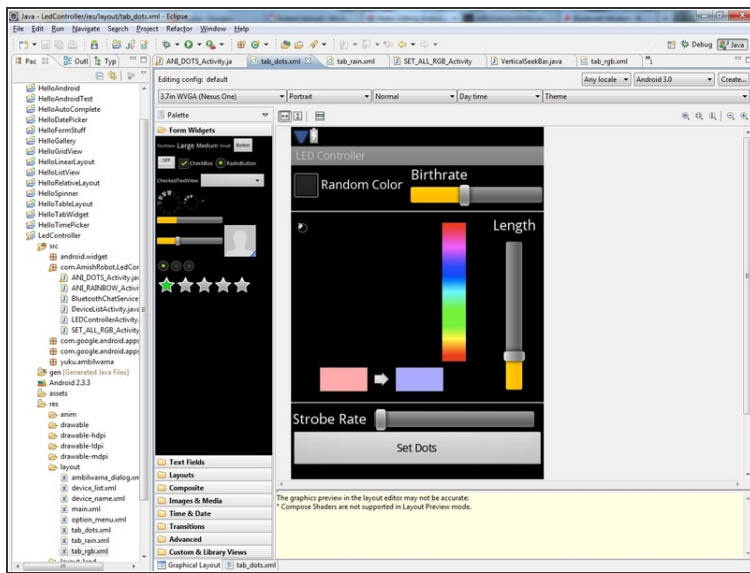
- Solder LED Pixels in a daisy-chain, making sure wires are correctly ordered.

Step 2



- Create micro-controller interface board and write embedded frame buffer code similar to code supplied by Bliptronics
here: <http://bliptronics.com/projects/LEDArdui...>
- Multiple battery inputs (top right connectors) to extend battery life
- Multiple power outputs (top left connectors) to reduce line losses along LED daisy-chain
- High current rated LDO Linear Regulator (and heat sink)
- BlueSMiRF Silver for Android connectivity
- Single data output (far left connector)
- Data lines to micro-controller board (i.e. Arduino) [Blue wires] for SPI and UART lines
- Hard reset button

Step 3



- Develop Android App
 - Create tabbed layout with activities to set parameters for different patterns. The 'set' button the sends command over bluetooth
 - Color picker
by: <http://code.google.com/p/android-color-p...>
 - Bluetooth from Android Bluetooth Chat example:
<http://developer.android.com/resources/s...>
 - Vertical Seekbar by Neil D
here: <http://stackoverflow.com/questions/63123...>

Step 4



- Sew LEDs into garment.

Step 5



- Party!
- Video demo here:
<http://www.youtube.com/watch?v=DcY8FnuDO...>

Step 6



- Just a word of caution that I was never able to get the BlueSmirf to consistently send data to the Android, only from the Android to the BlueSmirf. I forget, but you may also need to change the BUAD rate of the BlueSmirf which you can read how to do in the RN-42 AT Command Set.

Be sure to check out the video demo here: <http://www.youtube.com/watch?v=DcY8FnuDO...>

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